Abstract of the Disclosure

A deformable stamp for patterning a surface. The stamp can be placed in contact with an entire 3-dimensional object, such as a rod, in a single step. The stamp can also be used to pattern the inside of a tube or rolled over a surface to form a continuous pattern. The stamp may also be used for fluidic patterning by flowing material through channels defined by raised and recessed portions in the surface of the stamp as it contacts the substrate. The stamp may be used to deposit self-assembled monolayers, biological materials, metals, polymers, ceramics, or a variety of other materials. The patterned substrates may be used in a variety of engineering and medical applications.